

REMARKS

A. Introduction

Claims 1, 4, 15-18, 23-31, 33 and 34 were pending and under consideration. Claims 2, 3, 5-14, 19-22, and 32 were previously cancelled.

In the Office Action of January 13, 2010, claims 1, 4, 15-18, 23-31, 33 and 34 were rejected.

With this response, no claims are amended.

In view of the following remarks, reconsideration and allowance of all the pending claims are requested.

B. Rejection under 35 USC §112

Claims 1, 4, 15-18, 23-31, 33 and 34 were rejected under 35 USC 112 as failing to comply with the written description requirement.

The Examiner argues, "[t]he specification does not appear to disclose a sintered mesophase carbon material in combination with the claimed anode active material," i.e., an anode active material comprising Li and a tin or silicon. See the Office Action, page 3.

However, the Specification discloses (1) a mesophase carbon that is sintered and is in combination with Mg₂Si. See Specification, paras. [0052], and Fig. 2. Specifically, Example 2 of the Specification discloses:

"The powder obtained was observed using a scanning electron microscope (SEM) and the average particle diameter was found to be about 5 micrometers. Moreover, structural analysis was performed using the X-ray diffraction method. The diffraction peak obtained was confirmed to be Mg₂Si registered in the JCPDS file. This Mg₂Si was mixed with mesophase carbon not sintered and the mixture was molded into a pellet shape, which was processed in an inert gas and vacuum to obtain a pellet-shaped anode as a sintered carbon body having an outer diameter of 15.6 mm, height of 0.8 mm, and weight of 180 mg." See, 2005/0053835, Para. [0052].

Therefore, since the carbon and Mg₂Si are processed in an inert gas to produce a sintered carbon body, the specification fully discloses a sintered carbon material in combination with the claimed anode active material.

Accordingly, reconsideration and withdrawal of these rejections are requested.

C. Rejection under 35 USC §103

Claims 1, 4, 15-18, 23-28, 30, 31, 33 and 34 were rejected under 35 U.S.C. §103(a) as being unpatentable over JP10-312789 to Inamasu ("Inamasu") in view of Moriguchi (U.S. Pat. No. 6,576,369) ("Moriguchi"). Applicant traverses this rejection for at least the following reasons.

Independent claims 1 and 4 presently require a mesophase carbon material that is sintered after being molded into a body of the non-aqueous electrolyte secondary cell.

Inamasu is limited to an anode with a binder and describes various binders for use with the anode. See JP10-312789, Paras. [0013]-[0014]. In the Office Action of January 13, 2010, the Examiner incorrectly states that Inamasu discloses electrodes which may include conductive agents, binders or filters. See, Office Action of January 13, 2010 at Page 4. This is a misinterpretation of Inamasu. Inamasu states that "an electric conduction agent, a binder, a filler, etc can be added as a mixture." See, JP10-312789, Para. [0013]. Therefore Inamasu discloses which materials can be mixed together, but does not disclose that one of the components of the mixture may be omitted as the Examiner alleges. Further, Inamasu goes on to describe the binders used in the mixture and the benefits of different types of binders. See, JP10-312789, Para. [0014]. Consequently, Inamasu fails to disclose or fairly suggest a binderless anode having a carbon that is sintered after being molded into a body of the non-aqueous electrolyte secondary cell, as required by independent claims 1 and 4, and is, therefore, unable to provide the aforementioned benefits of the present general inventive concept.

Moriguchi, similarly, fails to disclose a mesophase carbon material that is sintered after being molded into a body of the non-aqueous electrolyte secondary cell. Instead, Moriguchi discloses forming an electrode including graphite powder and no binder. See, U.S. Pat. No. 6,576,369, Col. 15, l. 31-36. Nowhere does Moriguchi disclose forming an electrode with a mesophase carbon material and no binder.

As the Applicant's specification discloses, a mesophase carbon material that is sintered after being molded into a body of the non-aqueous electrolyte secondary cell provides an increased anode active material filling density such that the anode has a large reaction area, thereby improving cell energy density and charge/discharge efficiency. See, 2005/0053835, Paras. [0033]-[0034].

Accordingly, independent claims 1 and 4 are patentable over Inasmasu and Moriguchi and withdrawal of these rejections and allowance of these claims are earnestly solicited. Likewise, claims 15-18, 23-31, 33 and 34 depending from independent claims 1 or 4 include all of the limitations of these independent claims and are allowable over the art of record for at least the same reasons discussed above with respect to these independent claims.

D. Conclusion

It is respectfully submitted that a full and complete response has been made to the outstanding Office Action and, as such, there being no other objections or rejections, this application is in condition for allowance. Notice to that effect is requested.

If any further fees are required in connection with the filing of this amendment, please charge the same to our Deposit Account No. 19-3140.

Respectfully submitted,
SONNENSCHN NATH & ROSENTHAL LLP

By /David R. Metzger/
David R Metzger, Reg. No. 32,919
233 S. Wacker Drive
Wacker Drive Station, Willis Tower
Chicago, IL 60606-1080
(312) 876 8000

ATTORNEYS FOR APPLICANT